

Abstract of the Disclosure

- Novel compounds are provided that comprise esters of antiviral
- 5 phosphonomethoxy nucleotide analogs with carbonates and/or carbamates having the structure  $-OC(R^2)_2OC(O)X(R)_a$ , wherein  $R^2$  independently is H, C<sub>1</sub>-C<sub>12</sub> alkyl, aryl, alkenyl, alkynyl, alkyenylaryl, alkynylaryl, alkaryl, arylalkynyl, arylalkenyl or arylalkyl which is unsubstituted or is substituted with halo, azido, nitro or  $OR^3$  in which  $R^3$  is C<sub>1</sub>-C<sub>12</sub> alkyl; X is N or O; R is independently H, C<sub>1</sub>-
- 10 C<sub>12</sub> alkyl, aryl, alkenyl, alkynyl, alkyenylaryl, alkynylaryl, alkaryl, arylalkynyl, arylalkenyl or arylalkyl which is unsubstituted or is substituted with halo, azido, nitro, -O-, -N=, -NR<sup>4</sup>-, -N(R<sup>4</sup>)<sub>2</sub>- or  $OR^3$ , R<sup>4</sup> independently is -H or C<sub>1</sub>-C<sub>8</sub> alkyl, provided that at least one R is not H; and a is 1 or 2, with the proviso that when a
- 15 is 2 and X is N, (a) two R groups can be taken together to form a carbocycle or oxygen-containing heterocycle, or (b) one R additionally can be  $OR^3$ . The compounds are useful as intermediates for the preparation of antiviral compounds or oligonucleotides, or are useful for administration directly to patients for antiviral therapy or prophylaxis. Embodiments are particularly useful when administered orally.